U.S. FISH AND WILDLIFE SERVICE
SPECIES ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: *Ivesia webberi*

COMMON NAME: Webber ivesia

LEAD REGION: Region 8

INFORMATION CURRENT AS OF: April 2010

STATUS/ACTION

___ Species assessment - determined we do not have sufficient information on file to support a proposal to list the species and, therefore, it was not elevated to candidate status

___ New candidate

_X_ Continuing candidate

___ Non-petitioned

_X_ Petitioned - Date petition received: May 11, 2004

_ 90-day positive - FR date:

_ 12-month warranted but precluded - FR date:

_ Did the petition request a reclassification of a listed species? No

FOR PETITIONED CANDIDATE SPECIES:

a. Is listing warranted (if yes, see summary of threats below)? Yes

b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? Yes

c. If the answer to a. and b. is "yes", provide an explanation of why the action is precluded.

The petition received in May 2004 to list all 225 candidate species, including *Ivesia webberi* as an endangered species under the Endangered Species Act, was largely based on the present or threatened destruction, modification, or curtailment of its habitat or range, disease or predation, the inadequacy of existing regulatory mechanisms, and other natural or manmade factors affecting its continued existence (Center for Biological Diversity (CBD) *et al.* 2004). In addition, the petitioners stated that these species have been on the candidate list for 17 years or more, and such delays have contributed to the extinction of many non-listed species (CBD *et al.* 2004). We considered the information contained in the petition in this assessment; however, no new substantive data on *I. webberi* was presented.

Higher priority listing actions, including court-approved settlements, court-ordered and statutory deadlines for petition findings and listing determinations, emergency listing determinations, and responses to litigation, continue to preclude the proposed and final listing rules for the species. We continue to monitor populations and will change its status or implement an emergency listing if necessary. The "Progress on Revising the Lists" section of the current CNOR (*http://endangered.fws.gov/*) provides information on listing actions taken during the last 12

months.

___ Listing priority change
Former LPN: ___
New LPN: ___
Date when the species first became a candidate (as currently defined): June 13, 2002

___ Candidate removal: Former LPN: ___
___ A – Taxon is more abundant or widespread than previously believed or not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.
___U – Taxon not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status due, in part or totally, to conservation efforts that remove or reduce the threats to the species.
___ F – Range is no longer a U.S. territory.
___ I – Insufficient information exists on biological vulnerability and threats to support listing.
___ M – Taxon mistakenly included in past notice of review.
___ N – Taxon does not meet the Act's definition of "species."
___ X – Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Flowering Plants, Rosaceae (Rose Family)

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Nevada and California

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Lassen, Plumas, and Sierra Counties, California; Douglas and Washoe Counties, Nevada

LAND OWNERSHIP: The eight Nevada populations of *Ivesia webberi* occur on a total of about 27 acres (ac) (11 hectares (ha)) on Federal lands managed by the U.S. Forest Service (USFS), Humboldt-Toiyabe National Forest (HTNF), Carson Ranger District (80 percent); Bureau of Land Management (BLM), Carson City District (1.5 percent); and private lands (18.5 percent). The eight California populations occur on a total of about 157 ac (63 ha) on lands managed by the HTNF (74 percent); BLM, Eagle Lake Field Office (8 percent); California Department of Fish and Game (CDFG) (8 percent); and private and county lands (10 percent). Witham (2000, p. 12) noted that the protocols used to map many California populations substantially overestimate the actual area occupied by the species.

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BIOLOGICAL INFORMATION

Species Description. *Ivesia webberi* is a low, spreading, perennial herb with greenish-gray foliage with dark red, wiry stems. The leaves are mostly clustered around the base of the stems, with 4-8 pairs of leaflets crowded at the tip, and generally covered with long, silky grayish hairs. The inflorescence is a capitate or subcapitate cyme with 5-15 yellow flowers per group. The whole plant becomes reddish-tinged late in the season. Flowering typically begins in May and extends through June (Witham 2000, p. 9).

Ivesia webberi. (Witham 2000, Figure 2, Appendix 2, p. 2)

Taxonomy. Lemmon discovered *Ivesia webberi* in Sierra Valley, Plumas County, California, in 1872, and Gray (1874, p. 71) described it as a new species in 1874. Green (1887, p. 105) included it in *Potentilla*, whereas Rydberg (1898) treated it as *Horkelia*. Keck (1938, p. 129) resolved the taxonomy and returned this species to the genus *Ivesia*, where it has remained. The generic distinctions between *Ivesia*, *Potentilla*, and *Horkelia* have been unclear, but more recent treatments have maintained the various generic distinctions (see discussion in Ertter 1989, p. 231). The generic treatment would not, however, call into question the validity of *I. webberi* as a distinct species, regardless of its generic placement (Witham 2000, p. 6). Current information on taxonomic validity was reviewed on the Jepson Flora Project website; *Ivesia webberi* is the accepted name for a taxon native to California (http://ucjeps.berkeley.edu/jeps-list.html; website accessed on March 22, 2010). Based on our review of these sources, we conclude that *I. webberi* is a valid taxon which occurs in California and Nevada.

Habitat/Life History. *Ivesia webberi* is restricted to sites with sparse vegetation and shallow, clay soils derived from andesitic rock (Witham 2000, p. 16); some reports claim, perhaps erroneously,

that the substrate on which the plants grow is a volcanic ash. The soils are well developed, a process estimated to take 1,000 years (Zamudio 1999, p. 2). Occupied sites generally occur on mid-elevation flats, benches, or terraces on mountain slopes above and adjacent to large valleys. The sites vary from slightly concave to slightly convex or gently sloped and receive no colluvium from upslope. The species has been reported from sites between 4,480 and 5,950 feet (1,365 and 1,814 meters) elevation. These sites tend to be wet in the spring but dry out as the season progresses. The high clay content in the soils creates a shrink-swell behavior as the soils wet and dry, which tends to "heave" rocks in the soil profile to the surface and creates a rocky surface "pavement" (Zamudio 1999, p. 1). The vernally moist, but otherwise dry and rocky habitat is typically dominated by *I. webberi*, along with *Artemisia arbuscula* (low sagebrush) and a variety of perennial herbs, many of which have a cushion-like life form (Witham 1991, p. 2; Witham 2000, p. 17, Appendix 1, p. 5). The unique soils and hydrology of the *I. webberi* sites may exclude competition from other species (Zamudio 1999, p. 1; Witham 2000, p. 16). The shrink-swell of the clay zone, which extends into the subsoil, favors perennials with deep taproots or annuals with shallow roots that can complete their life cycle before the surface soil dries out (Zamudio 1999, p. 1; Witham 2000, pp. 16, 20).

New leaves and flowering stems of *Ivesia webberi* appear to emerge in response to higher soil temperatures in the spring, and populations have been observed in full flower during the last week in May (Witham 2000, p. 19). Flowers have been observed to open throughout the month of June, but individuals likely begin flowering in early May and some may produce flowers as late as the middle of July, especially on protected sites (Witham 2000, p. 19). The fruits are likely mature in about a month, between mid-June and the end of July (Witham 2000, p. 19).

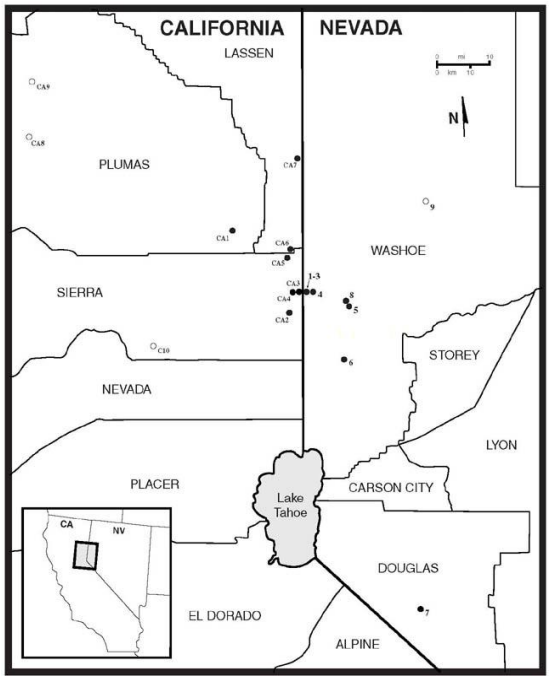
Historical Range/Distribution. The range of the species lies along the transition zone between the eastern edge of the northern Sierra Nevada and the northwestern edge of the Great Basin Desert (Witham 2000, p. 15). This region is characterized by the climatic influences of high mountains within and adjacent to the high desert (Witham 2000, p. 15). Extensive field surveys for *Ivesia webberi* were conducted between 1990 and 1998 to verify and refine historical reports, locate any additional populations, and document the biology, ecology, and conservation status of the species (Witham 2000, pp. 13-14). Surveys performed in support of the 2000 status report documented one new and seven historic extant populations in Nevada and seven historic extant populations in California. A historic records of one specimen from Pyramid Lake, Nevada, is presumed erroneous, as are two historic localities reported in California (American Valley and Indian Valley)(Witham 2000, pp. 13-14).

Current Range/Distribution. Currently, eight populations are known from Nevada and eight populations (including a population discovered in California since the 2000 status survey) are presumed extant in California (Witham 2000, p. 11, Appendix 1, p. 1; Bergstrom 2009, Table 1, pp. 6-7). The 16 known occurrences are clustered in seven general locations covering about 185 ac (75 ha). As previously noted, protocols used to map the many California populations are a substantial overestimate of the actual occupied area (Witham 2000, p. 12). In Washoe County, Nevada, six of the eight populations are clustered around north Reno, near the Peavine Mountain and Raleigh Heights areas; a seventh population lies on a terrace due west of Reno. The eighth Nevada population lies in the Pine Nut Mountains in Douglas County, about 50 miles (mi) (80

kilometers (km)) south of the nearest Reno population (Witham 2000, p. 13, Appendix 1, p. 1, Appendix 3, p. 1).

Four of the eight California populations occur in eastern Sierra County in and around Dog Valley. A fifth population in Sierra Valley, Plumas County, is the type locality. The other three sites are in the vicinity of Evans Canyon and Constantia, Lassen County (Bergstrom 2009, Table 1, pp. 6-7).

Surveys of an estimated 2,055 ac (539 ha) of potential habitat in the vicinity of known occurrences in western Washoe County and an estimated 1,900 ac (579 ha) in the Pine Nut Mountains documented no additional populations of the species (Witham 2000, p. 13, Appendix 1, pp. 3-4). An unknown amount of potential habitat remains unsurveyed in Nevada. However, field observations indicate less than 5 percent of such habitat actually supports plants; a site that looks suitable from a distance usually ends up being too dry or lacks the shallow clay soils associated with the species (Witham 2000, p. 14). In California, the western rim of Upper Long Valley in Sierra County is the only area that may support high quality potential habitat that has not been surveyed; because this area is primarily private property, it is unlikely to be surveyed (Witham 2000, p. 19).



Distribution of *Ivesia webberi* (Witham 2000, Appendix 3, p. 1)

Population Estimates/Status. Although the cumulative total of individuals among the 16 known populations is estimated to be 4,857,200, one population is estimated to contain 4,000,000 or 82 percent of them (Bergstrom 2009, Table 1, pp. 6-7). The four largest populations combined, of which three are in Nevada and the other in California, account for 99 percent of the estimated cumulative total (Bergstrom 2009, Table 1, pp. 6-7). One Nevada site estimated to be the second largest population is on private land; the other three large populations are on land managed by the

HTNF (Witham 2000, Appendix 1, p. 1). Moreover, eight of the known populations have an estimated 1,000 or fewer individuals; the remaining two populations are estimated to have 10,000 and 36,500 individuals (Bergstrom 2009, Table 1, pp. 6-7).

Not all of these population estimates were made using the same methodology. Small populations were estimated by direct counting, while counts for the large Nevada populations were estimated by taking the average density of plants observed along a belt transect through the population and extrapolation based on the entire mapped area of the population (Witham 2000, p. 12). No quantitative density sampling has been conducted in any of the California populations (Witham 2000, p. 19). In addition, differences in the precision of the mapped boundaries, as well the combining of California population within 0.25 mi (0.4 km) of each other into a single polygon, thereby overestimating the total acreage of the populations, affect the accuracy of these estimates (Witham 2000, p. 12). The estimates are considered accurate "only to within a half an order of magnitude at best, and were intended mainly to reflect relative population sizes" (Witham 2000, p. 12).

No replicable monitoring has been initiated on any of the *Ivesia webberi* populations. In general, all populations were observed to have both large, well-established plants with numerous flowering stems and smaller plants represented by only a few leaves and no flowering stems (Witham 2000, p. 19). The leaves of smaller plants appear crisped and drying early in the season and juvenile mortality may be relatively high (Witham 2000, p. 19). The species appears to have moderate recruitment within established populations, but no colonization of nearby apparently suitable habitat was observed (Witham 2000, p. 19).

THREATS

A. <u>The present or threatened destruction, modification, or curtailment of its habitat or range</u>. General threats to the habitat of *Ivesia webberi* include land development; road construction and maintenance; off-road vehicle activities; livestock management and trampling; and fire suppression activities (Witham 2000, Appendix 1, p. 1; USFS 2001, pp. 33-34). Not all of these threats to habitat apply to every population, and the significance of any particular threat also varies by population.

Urban development poses the most significant direct threat to the four populations (NV1, NV2, NV3, and NV6) on private land in the Reno area (Witham 2000, p. 22, Appendix 1, p. 1). The estimated 760,000 individuals which occur on these 4.2 ac (1.7 ha) of private land comprise nearly 40 percent of the known occupied habitat and about 15.5 percent of the total number of individual plants in Nevada (Witham 2000, Appendix 1, p. 1; Wood Rogers 2007, p. 5).

The second largest known population (Site NV6), with an estimated 757,000 individuals on 1.5 ac (2.4 ha), is among the Reno area populations on private land (Witham 2000, Appendix 1, p. 1; Wood Rogers 2007, p. 5) and has recently been proposed for development (Nelson 2006, p. 1). An application submitted to the Nevada Division of Forestry (NDF) in November 2007 sought a permit to remove about 58 percent of the total habitat with a resulting loss of 53 percent of this population (Wood Rogers 2007). This application was subsequently amended to preserve an

additional 3,000 square feet (279 square meters) of habitat; the additional habitat includes very low densities of *Ivesia webberi* and is infested with an annual grass, *Taeniantherum caput-medusae* (medusahead), a designated noxious weed (Wood Rogers 2008). This proposal also sacrifices and fragments the largest, high-density subpopulation on the site, one that comprises more than half of the habitat and more than two-thirds of the individuals in this subpopulation. We do not consider this proposal to be based on sound conservation planning principles and believe that, if approved, it would compromise the long-term viability of this population (Service 2008, p. 1).

The other three populations on private land in the Reno vicinity have a combined estimated 3,000 individuals on 9 ac (3.6 ha) (Witham 2000, Appendix 1, p. 1). These parcels (Sites NV1, NV2, and NV3) were undeveloped rural land in 1991, but have since been fenced and new roads have been graded in the area (Witham 2000, p. 22). The Washoe County Geographic Information System (GIS) website (http://www.co.washoe.nv.us/gis, accessed on March 21, 2007), shows all three of these to lie on lands annexed by the City of Reno. A home was constructed on the parcel that includes Site NV2 in 2004, but does not appear to have impacted either occupied or unoccupied habitat. As of the 2006 date of the imagery available on the website, Sites NV1 and NV3 appear intact, although the freshly graded road mentioned in Witham (2000, p. 22 and shown in Figure 4, Appendix 2, p. 3) is clearly visible adjacent to Site NV1. Site NV1 is on a 40 ac (16.2 ha) parcel currently owned by an investment company, and presumably is slated for development, although there are no permits recorded for the parcel. Site NV3 lies along the edge of a 475 ac (192.2 ha) parcel owned by a single individual whose intentions for the land are unknown.

The four remaining Nevada sites do not appear to be at risk of residential development. Three are on lands managed by the Carson Ranger District of the Humboldt-Toiyabe National Forest (HTNF); Site NV5 is the largest known population with an estimated 4,000,000 individuals on 12 ac (4.9 ha) while Site NV4 is estimated to have 100,000 individuals on about 1.4 ac (0.6 ha) (Witham 2000, Appendix 1, p. 1). The Carson Ranger District has acquired a 6.3 ac (2.5 ha) parcel of private land adjacent to Site NV4 with more than 500 plants (Joanne Baggs, HTNF, pers. comm., 2008). The remaining Nevada occurrence (Site NV7) lies about 50 miles (80 kilometers (km)) south of the nearest Reno population in the Pine Nut Mountains in Douglas County, where it occurs on both private land and public land managed by the BLM; residential development may be a threat to this population, although its proximity to U.S. Highway 95 may make it more valuable for commercial development (Witham 2000, p. 25, Appendix 1, p. 1). Only a corner of this population is on BLM land; the rest of the population is on land owned by the Washoe Tribe of Nevada and California (Dean Tonenna, Carson City District, BLM, pers. comm., 2010, p. 1).

Two of the seven California sites (CA6 and CA7) are entirely on private land. Each site is estimated to have fewer than 999 individuals; one is 0.1 ac (0.04 ha) in size and the other is 1.5 ac (0.6 ha). Electronic communications facility development has been identified as a potential threat to both sites (Witham 2000, Appendix 1, p. 1). A third California site at the type locality in Sierra Valley occurs on private, State, and (a small amount of) BLM land with an estimated 2,000 individuals on 40 ac (16.2 ha). Land development has been identified as a potential threat

(Witham 1991, p. 9; Witham 2000, Appendix 1, p. 1); the most recent site information on this population in the California Natural Diversity Data Base (CNDDB) dates from 1992. Three of the remaining California sites (CA2, CA3, and CA4) are on land managed by the HTNF; the largest of these (Site CA2) is estimated to have 1,000,000 individuals while the other two are estimated at 10,000 (Site CA4) and 1,000 plants (Site CA3) (Witham 2000, Appendix 1, p. 1). The remaining California site (CA5) was estimated to have about 200 individuals in 1992; it occurs on land owned by the State of California and managed by CDFG (Witham 2000, p. 18)

Most of the *Ivesia webberi* populations occur on or adjacent to dirt roads, which are prominent features of the eastern California and western Nevada landscape. Authorized and unauthorized roads have directly destroyed and modified habitat and continue to fragment habitat and create pathways for the spread of invasive weeds (Witham 2000, Appendix 1, p. 1; Bergstrom 2009, p. 25-26). All but one of the known populations has been affected by road development and continue to be impacted by road maintenance; road development and maintenance do not appear to have yet compromised population viability at any site, but remain a threat of uncertain significance to six of the eight populations in Nevada and two of the California populations (Witham 2000, p. 22; Appendix 1, p. 1). Roads and road maintenance are likely the most significant direct threat to populations on public land managed by the HTNF (Witham 2000, p. 22; Bergstrom 2009, p. 25). See the discussion under Factor D, Inadequacy of Existing Regulatory Mechanisms.

On Federal lands, livestock grazing is the dominant resource use within the range and habitat of this species. While the relatively sparse, low vegetation of most *Ivesia webberi* sites may not be appealing to grazing animals, the lack of topography makes these sites attractive for permittees to install salt licks, fences, and other range modifications likely to concentrate trampling (Witham 2000, p. 21). Due to urban expansion in the Reno vicinity, livestock grazing no longer poses a threat to sites in this area although impacts from past grazing were noted at two sites (USFS 2001, pp. 33-35); the Douglas County, Nevada, occurrence (Site NV7) is unfenced and lies along a major highway (Witham 2000, p. 22) and, therefore, is unlikely to be used for livestock grazing. Two of the populations on public land in California (Sites CA3 and CA4) could potentially be affected by livestock trampling and associated activities (Witham 2000, Appendix 1, p. 1; USFS 2001, p. 35). An additional two populations on private land in California (CA6 and CA7) are also vulnerable to grazing impacts (Bergstrom 2009, Table 1, pp. 6-7).

The relatively flat and accessible terrain of *Ivesia webberi* habitats also provides convenient areas on which to establish staging areas for fire suppression activities (Witham 2000, p. 22; Bergstrom 2009, p. 22)). Under these circumstances, plants are trampled, soils are disturbed or compacted, and the probability of an invasion by nonnative plant species is high. Impacts from fire suppression activities have been observed at one population in Nevada (Site NV5) and two populations in California (Sites CA4 and CA5) (Witham 2000, p. 22, Appendix 1, p. 1). As the urban interface continues to expand into wildlands, fire suppression activities required to protect human life and property will intensify, increasing the threats to the species and its habitat (Witham 2000, p. 22). Fire as a natural factor, and the related issue of invasive weeds, is further addressed in Factor E, Other Natural or Man-Made Factors Affecting Its Continued Existence.

B. Overutilization for commercial, recreational, scientific, or educational purposes. There is no evidence that overutilization for commercial, recreational, scientific, or educational purposes poses a threat to the species.

C. Disease or predation. There is no evidence that disease poses a threat to the species. Heavy grazing by cattle and sheep contributes to reduced vigor and may lead to extirpation of populations of this species. In heavily grazed areas, the plant size, number of leaf and flower stems, and number of viable fruit of the related and similar species, *Ivesia aperta* var. *aperta* (Sierra Ivesia) and *I. serioleuca* (Plumas Ivesia) have been observed to be much reduced compared to average plants (USFS 1992, p. 16).

D. The inadequacy of existing regulatory mechanisms. The USFS has designated *Ivesia webberi* as a sensitive species in both California and Nevada (Weixelman and Atwood 1991, pp. 48-49); Sensitive Species are managed under Forest Service Manual 2670 *et seq*. The HTNF manages areas in Nevada and California where *Ivesia webberi* occurs under the Sierra Nevada Forest Plan (SNFP), for which the Service issued a biological opinion on January 11, 2001. Areas in which *I. webberi* occur on the Carson Ranger District are managed under the Northern Sierra Plan Amendment (NSPA) to the SNFP. An informal consultation on the NSPA included *I. webberi* as a USFS Sensitive Species that was (then) a potential Federal candidate species through an October 2000 National Memorandum of Agreement between the USFS and the Service (USFS 2001, pp. 2, 33-35). The USFS determined that the preferred alternative under the NSPA may affect individuals but is not likely to lead to a trend towards Federal listing or loss of viability for *I. webberi* (USFS 2001, p. 35). This determination was based, in part, on the requirement that site specific analysis including Biological Evaluations and Biological Assessments be done for all planned management activities, and prior to land adjustments or conveyances.

The HTNF, including the Carson Ranger District, is currently undertaking a multi-year process to inventory all the roads, trails, and areas used by off-highway vehicles (OHV), identify a system of routes from that inventory, and designate those routes and areas for OHV use. A Memorandum of Intent between the USFS Pacific Southwest Region (Region 5) and the Intermountain Region (Region 4) was established to guide the designation process and set a schedule for completion. The Carson Ranger District signed a Record of Decision on a Travel Management Plan (TMP) for Peavine Mountain, an area which includes several population of *Ivesia webberi* on both public and private lands (USFS 2006, pp. 1-8). The TMP designates 46 mi (73.6 km) of roads open to the public, 36 mi (57.6 km) of motorized trails, and 22 mi (35.2 km) of non-motorized trails; about 75 mi (120 km) of roads and other routes are closed to motor vehicle use and will be rehabilitated as needed. Cross country motor vehicle use off of designated motorized routes is prohibited (USFS 2006, p. 2). An Environmental Assessment prepared for this action concluded that USFS Sensitive Species of plants, *I. webberi* included, may be impacted if inadvertent or illegal trampling occurs, but that the closure and rerouting of roads would ultimately benefit plant populations by reducing the threat of trampling and by allowing native and rare plant communities to be restored (USFS 2006, p. 23). Peavine Mountain is adjacent to the urban growth area of Reno and illegal off-road vehicle use, among other problems, remains a serious problem despite the implementation of the TMP (Reno Gazette-Journal 2007a, b).

In 2008, the Carson Ranger District published a Motor Vehicle Use Map (MVUM) based on their existing travel plan and orders, as modified by the decision for the TMP for Peavine Mountain and other areas (USFS 2009, p. 1). The MVUM shows roads designated for motor vehicle use pursuant to 36 CFR. 212.51 for the purpose of enforcing the prohibition against violation of the designation at 36 CFR 261.13; no motorized vehicle use is permitted within any known occurrence of *Ivesia webberi* on National Forest land (USFS 2008, p. 1). We have no information on the effectiveness of these regulations in addressing threats posed by OHVs to *I. webberi*.

The Peavine Mountain area also remains highly vulnerable to wildfire, and in recent years many acres have burned (USFS 2006, p. 19; Bergstrom 2009, p. 8). The relatively sparse vegetation of *Ivesia webberi* sites makes them unlikely to be directly impacted by wildfire but, as noted under Factor A, fire suppression activities pose a threat to populations because the generally flat sites where they typically occur are practical staging areas (Witham 2000, p. 22). In addition, fire suppression activities may facilitate the spread of invasive weeds; a wash-down area for fire fighting vehicles was established in a patch of the invasive annual grass *Taeniantherum caput-medusae* during a recent fire (J. Baggs, pers. comm., 2007).

The HTNF has recently completed a Conservation Strategy (CS) for *Ivesia webberi* (Bergstrom 2009). The CS indentifies existing and potential concerns on federal, state, and private lands that include recreational impacts from OHVs, land and road development, non-native invasives species, livestock grazing, climate change, and natural factors. The overall resource management objective is to maintain the viability of *I. webberi* populations and effectively prevent its potential decline consistent with Forest Service Manual 2672.1 and the Toiyabe National Forest Land and Resource Management Plan. The CS proposes 10 management measures to achieve this objective for *I. webberi*: 1) maintain current populations; 2) design actions to prevent loss of habitat, including priority potential habitat; 3) implement the CS; 4) coordinate with other federal and state agencies and city and county governments; 5) conduct demographic and plant community monitoring on HTNF lands, 6) close or reroute existing roads and trails to avoid populations; 7) develop management options for priority potential habitat areas on the HTNF; 8) maintain site specific survey standards for all projects proposed within potential habitat; 9) highlight conservation and management of occupied and potential habitat through the Forest Plan Revision including an evaluation of the opportunity to close all, or portions, of grazing allotments, or the addition of exclosures to address the threat posed by livestock; and 10) collection and long-term storage of seed in an appropriate repository (Bergstrom 2009, pp. 28-30).

In addition to the above management measures, the CS includes monitoring and research objectives. The proposed monitoring includes demographic monitoring to provide life history information on *Ivesia webberi* and to document the effects of nonnative invasive plants; site visits to monitor threats and population status for each documented occurrence over a 5-year period; and permanent recording of the perimeter of selected populations, along with the establishment of permanent photo points, to assess any change in distribution on the sites (Bergstrom 2009, p. 30). Research goals identified in the CS include determining treatment

options for the elimination and control of invasive plants within *I. webberi* populations, developing protocols for propagation and transplantation into potential but unoccupied habitat, identification of pollinators, and seed bank studies to predict recovery options following wildfire (Bergstrom 2009, pp. 30-31).

As a Federal candidate species, populations of *Ivesia webberi* on BLM land are managed under the policies contained in their 6840 Manual, Release 6-125, revised as of December 12, 2008 (BLM 2008b). BLM policy is to manage candidate species as sensitive species, defined as "species that require special management or considerations to avoid potential future listing" (BLM 2008b, Glossary, p. 5). The stated objective for sensitive species is to initiate proactive conservation measures that reduce or eliminate threats to minimize the likelihood of and need for listing (BLM 2008b, 6840.02). Conservation, as it applies to BLM sensitive species, is defined as "the use of programs, plans, and management practices to reduce or eliminate threats affecting the status of the species, or improve the condition of the species' habitat on BLM-administered lands" (BLM 2008b, Glossary, p. 2). At least two populations of *I. webberi* are known to occur on, or partially on, BLM lands managed by the Carson City Field Office. One of them, in Douglas County, Nevada, is threatened by road development and maintenance and off-road vehicle activity (Witham 2000, Appendix 1, p. 2), while the other, in Lassen County, California, is threatened by road and electronic site construction and maintenance, and grazing (Witham 2000, Appendix 1, p. 2).

Because of its narrowly restricted range and existing threats, the participants of the 2000 and 2001 Nevada Rare Plant Workshop, sponsored by the Nevada Native Plant Society, recommended that the State of Nevada consider *Ivesia webberi* for listing as critically endangered under Nevada Revised Statutes (NRS) 527.270 *et seq*. The species was State-listed under the NRS in January 2004. Under State law, permits for the disturbance of habitat or taking of individuals must be obtained from NDF. The adequacy of this law depends greatly on informed and cooperative landowners and land managers or some form of deterrent enforcement, which the current NRS does not articulate. As noted above, a home was constructed adjacent to a population of *I. webberi* in 2004 on unincorporated Washoe County land, although the building permit issued on September 15, 2003, predates the 2004 listing by the State. However, the Washoe County Department of Community Development had reviewed a map showing the presence of the species on November 10, 2003, when a Senior Planner for the County noted that as of that date, he was not aware of any pending development applications in the area (Washoe County 2003, pp. 1-1). Most recently, the City only became aware that a parcel proposed for development contained a population of the species after a Washoe County natural resource planner familiar with the species alerted them; the City subsequently required the developer to have a third-party consultant conduct a site inventory for the species (Lynda Nelson, Washoe County, pers. comm., 2006). The NDF has received an application for a permit to remove about 58 percent of the plant's habitat, including much of the largest subpopulation (see Factor A discussion above). We have received information that the major differences between NDF and the applicant have been resolved, but we do not know if a permit has been issued (NDF 2008, p. 1). Because of the current economic conditions, few housing developments are in active development in the Reno area. Based on the Washoe County GIS website (http://wcgisweb.washoecounty.us/website/), accessed on March 23, 2010), no building permits

have yet been applied for on any of the parcels in this development.

Ivesia webberi is designated as threatened by the Nevada Native Plant Society, and is on the California Native Plant Society's (CNPS) 1B list (plants considered rare, threatened, or endangered in California and elsewhere). All plant species on the CNPS 1B list meet the definitions under the Native Plant Protection Act (Section 1901, Chapter 10) and the California Endangered Species Act (Sections 2062 and 2067) of the CDFG Code, and are eligible for State listing. The species is not listed by California under its State Endangered Species Act, but plants on the CNPS 1B list must be fully considered during the environmental documentation process pursuant to Section 15380 of the California Environmental Quality Act (CEQA) (CDFG 2009, p. ii). However, CEQA only requires disclosure of a project's impacts on the species; it does not provide protective management for *I. webberi*.

E. Other natural or manmade factors affecting its continued existence.

Generally, undisturbed *Ivesia webberi* habitat is resistant to invasion by nonnative species. However, on sites where range improvements or other disturbances have occurred on the edge of *I. webberi* populations, *Taeniatherum caput-medusae* is becoming established and further disturbance, particularly soil disturbance, could lead to an irreversible displacement of *I. webberi* by this invasive annual grass (Witham 2000, p. 22). Other invasive plant species that pose a potential threat to *I. webberi* include *Bromus tectorum* (cheatgrass) and *Poa bulbosa* (bulbous bluegrass) which could displace it over time (Bergstrom 2009, p. 23). Surface disturbance from illegal off-road vehicle activity poses a significant threat to *I. webberi* populations close to the Reno urban area and is of particular concern to the populations on the terraces along the base of Peavine Mountain, where such illegal use remains high, despite the implementation of the TMP on lands managed by the USFS (Reno Gazette-Journal 2007a,b).

Ivesia webberi may be vulnerable to stochastic perturbations, natural climatic shifts, or unprecedented climatic extremes due to its small, localized populations and its apparent adaptation to unusual edaphic conditions (Witham 2000, p. 24). The population biology of this species remains relatively unstudied, and the importance of insect pollinators to successful reproduction is unknown (Witham 2000, p. 24). Therefore, fragmentation or losses of habitat through any of the threats discussed above may affect the long-term viability of potential pollinators as well as the species itself.

CONSERVATION MEASURES PLANNED OR IMPLEMENTED

The CS recently developed by the HTNF represents the only formal effort to protect this species. The CS is discussed in more detail above under Factor D, but the overall resource management objective is to maintain the viability of *Ivesia webberi* populations and effectively prevent its potential decline (Bergstrom 2009). A conservation strategy for *Ivesia aperta* var. *canina* (Dog Valley ivesia) has also been prepared for the Dog Valley area, where *I. aperta* var. *canina* and *I. webberi* are sympatric; this area is being considered for special designation as a Botanical Area as part of an amendment to the current HTNF Resource Management Plan (J. Baggs, pers. comm., 2007). Because the CS was only signed by the Forest Supervisor on January 10, 2010,

its effectiveness in addressing the threats to the species remains to be determined.

SUMMARY OF THREATS (including reasons for addition or removal from candidacy, if appropriate)

Threats to species include residential development on private land. On public land, off-road vehicles pose the most significant threat, while to a lesser extent, fire suppression activities, trampling by domestic livestock and invasive species are of concern. We find that *Ivesia webberi* is warranted for listing throughout all its range, and, therefore, find that it is unnecessary to analyze whether it is threatened or endangered in a significant portion of its range. Table 1 provides a population occurrences summary from Witham (2000, Appendix 1, p. 1), updated with current population and threat information, to allow these threats to be more easily assessed across the species' range.

Table 1. Status of *Ivesia webberi* by population occurrence in Nevada and California.

	Estimated Ac (Ha)	Estimated Number of Plants	Threats	Management
Nevada Sites				
NV1	1.6 (0.6)	1,000	Development, Roads, OHVs	Private
NV2	0.2 (.08)	1,000	Development, Roads, OHVs	Private
NV3	0.9 (0.4)	1,000	Development, Roads, OHVs	Private
NV4	1.4 (0.6)	100,000	Fire and Suppression Activities, Invasive Weeds, OHVs	USFS
NV5	12.0 (4.9)	4,000,000	Fire and Suppression Activities, Invasive Weeds, OHVs	USFS
NV6[1]	1.5 (0.6)	757,000	Development, Roads, OHVs	Private
NV7	0.8 (0.3)	36,500	Roads, OHVs, Development	BLM, Private
NV8[2]	6.3 (2.5)	>500	Development, Roads, OHVs	USFS
California Sites (Area and number estimates based on different methods than Nevada)				
CA1	40.0 (16.2)	2,000	Invasive Weeds, Development, OHVs	BLM, Private, State
CA2	100.0 (40.5)	100,000	Roads, OHVs, Livestock Trampling	USFS
CA3	0.1 (.04)	1,000	Roads, OHVs, Livestock Trampling	USFS
CA4	15.0 (6.1)	10,000	Roads, OHVs, Livestock Trampling	USFS
CA5	0.1 (.04)	200	Roads, OHVs, Fire and Suppression Activities	State
CA6	0.1 (.04)	<999	OHVs, Livestock Trampling,	Private

[1] Population area and size estimate based on Wood Rodgers (2007).
[2] Previously shown as private, recently acquired by USFS (Bergstrom 2009, p. 8)

			Roads, Development	
CA7	1.5 (0.6)	<999	OHVs, Livestock Trampling, Roads, Development	Private
CA8[3]	0.5 (0.2)	5,000	Fire and Suppression Activities; Roads, OHVs	HTNF

For species that are being removed from candidate status:

___Is the removal based in whole or in part on one or more individual conservation efforts that you determined met the standards in the Policy for Evaluation of Conservation Efforts When Making Listing Decisions (PECE)?

RECOMMENDED CONSERVATION MEASURES

A conservation strategy for *Ivesia webberi* should be developed that includes management protocols for all populations on public lands and identifies populations on private lands critical to the conservation of the species on private lands, if any. A long-term monitoring plan should also be developed and implemented.

LISTING PRIORITY

THREAT			
Magnitude	Immediacy	Taxonomy	Priority
High	Imminent	Monotypic genus	1
		Species	2
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	**5***
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

Rationale for listing priority number:

Magnitude: Direct and indirect impacts to *Ivesia webberi*, specifically from urban development

[3] Population area and size estimate based on Bergstrom (2009, p. 7).

and OHV activity remain high. The expanding human population and associated activities mostly around the Reno area in Nevada poses the greatest threat to this species because of the proximity of the plant populations to the urban fringe. Despite being listed by NDF as critically endangered and, therefore, fully protected, state and local agencies are not proactive in ensuring that urban development in the greater Reno area is in compliance with Nevada statutes governing fully protected species. In 2004, a home was permitted and constructed on one parcel of private land with a known population of *I. webberi*, presumably without any consideration being given to the potential impact to the species. A housing development is currently proposed for a parcel of private land with one of the three largest populations of *I. webberi*; City of Reno planning staff only became aware of it when its presence was brought to their attention by a Washoe County planner. An application has been submitted to the NDF to remove over half of this population; no decision has yet been made on the issuance of a permit for this project. Although compromising the long-term viability of this population would not be advisable, we do not believe that it would pose a significant threat to the overall viability of the species.

Imminence: The overall threat to *Ivesia webberi* from development, OHV activity, and other land uses remain non-imminent at this time, although threats to some specific populations may be more imminent than to other populations. Proposals for new residential and commercial developments exist in areas immediately adjacent to occupied and potentially suitable habitat for *I. webberi*. These and other ongoing activities within the urban fringe, if allowed to take place unchecked, would continue to impact the species and its habitat. *Ivesia webberi* was recently listed as critically endangered by the State of Nevada, and through their permitting process, increased awareness regarding the species and the sensitivity of its habitat may be achieved, thereby preventing these threats from becoming imminent. The USFS has committed to managing populations on public lands for their long-term viability and has acquired lands supporting a portion of one population of the species from a private landowner.

Rationale for Change in Listing Priority Number (insert if appropriate)

___ Have you promptly reviewed all of the information received regarding the species for the purpose of determining whether emergency listing is needed? Yes

Is Emergency Listing Warranted? No. As stated above, the USFS has developed a strategy to protect this species on land managed by them. The intent is to produce a conservation agreement, which would include a commitment to developing and implementing a monitoring program. One of the three largest populations is currently proposed for a housing development, but the land on which it occurs is privately owned with no known Federal nexus. The value of emergency listing, therefore, is limited to the public controversy it would generate, as it would come with no Federal enforcement authority unless it were in knowing violation of Nevada statutes.

DESCRIPTION OF MONITORING

To date, no organized monitoring efforts have been implemented to track *Ivesia webberi*. Regular monitoring would provide data necessary to evaluate population stability and health and

effectiveness of specific habitat restoration and management activities. Potential problems, such as invasion by nonnative species and impacts from fire and fire management activities, could be identified and addressed in a timely manner. Qualitative methods, such as standardized photo points or presence-absence surveys, can offer important information regarding habitat conditions, expansion and/or declines of existing populations, or discovery of new populations (CNPS 1999).

The CS recently developed by the HTNF proposes to implement threat monitoring of all occurrences over a 5-year period, demographic and community monitoring of key populations on National Forest land, and distribution monitoring of selected populations (Bergstrom 2009, p. 30).

COORDINATION WITH STATES

Indicate which State(s) (within the range of the species) provided information or comments on the species or latest species assessment: Nevada

Indicate which State(s) did not provide any information or comments: California

Neither the California nor Nevada State Wildlife Action Plans include plants.

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APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes, including elevations or removals from candidate status and listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all resubmitted 12-month petition findings, additions or removal of species from candidate status, and listing priority changes.

Approve: _____ Date 6.7.2010
Regional Director, Fish and Wildlife Service

Concur: _____ Date: October 22, 2010
ACTING
Director, Fish and Wildlife Service

Do not concur: _____
Director, Fish and Wildlife Service Date

Director's Remarks:

Date of annual review: April 2010
Conducted by: Steve Caicco

FY 2010, R8 CNOR: Webber ivesia